

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte FREDERICK M. STEFANSKY, RICHARD B. BALSLEY JR.,  
ROBERT E. YATES and STEVEN R. SPECKMANN

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Appeal No. 1998-0204  
Application 08/501,542

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ON BRIEF

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Before JERRY SMITH, BARRETT, and HECKER, Administrative Patent Judges.

HECKER, Administrative Patent Judge.

***DECISION ON APPEAL***

This is a decision on appeal from the final rejection of claims 1 through 15 and 18 through 22, all claims

pending in this application.

The invention relates to a magnetic parking device for the actuator arm of a disk drive. In particular, looking at Figure 4, a capture member 100 is provided on the actuator arm 50 (via arm 55) and a permanent magnetic (located between pins 76a and 76b) latches capture member 100 (and thus arm 50) into a parked position. To unlatch arm 50, bucking coil 85 is energized to produce a neutralizing magnetic field, releasing capture member 100, and thus actuator arm 50 from its parked position.

Representative independent claim 1 is reproduced as follows:

1. A magnetic parking device for a disk drive having a data storage medium mounted on a base, means for reading information from and writing information to the data storage medium, and an actuator assembly, including an actuator body and means for positioning the actuator body, mounted on said base for selectively positioning the means for reading information from and writing information to with respect to the data storage medium, comprising:

a magnetically permeable capture member provided on the actuator body;

a magnet for providing a first magnetic field including a first magnetic flux;

a magnetic field containing member defining a path

of said first magnetic flux and including an air gap providing a portion of said first magnetic flux extending a predetermined distance into a capture region adjacent the capture member, the capture member being in the capture region when the actuator body is parked;

means for generating a second magnetic field in said field containing member, said second magnetic field having a polarity opposite said first magnetic field and having associated therewith a second magnetic flux having opposite direction to that of said first magnetic flux of said first magnetic field to neutralize the capture region;

control means for generating control signals directing data storage and retrieval, said control means including a first control interface coupled to the means for positioning the actuator body and a second control interface coupled to the means for generating said second magnetic field, wherein said first control interface is adapted to begin providing a movement current to the means for positioning the actuator body at a time when said second control interface begins to provide a field generating current to the means for generating said second magnetic field.

The references relied on by the Examiner are as follows:

Kelsic et al. 1991	5,023,736	Jun. 11,
Sampietro et al. 1994	5,361,182	Nov. 1, (filed Nov. 12, 1992)
Campbell et al. 1995 Apr. 2, 1993)	5,452,162	Sep. 19, (Effective filing date

Claims 1, 4, 6 through 9, 11 through 13, 15 and 18 through 22 stand rejected under 35 U.S.C. § 102(e) as being

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anticipated by, or in the alternative under 35 U.S.C. § 103 as being unpatentable over Sampietro.

Claims 2 and 3 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sampietro.

Claims 5, 10 and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sampietro in view of Kelsic.

Claims 5, 10 and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sampietro in view of Campbell.<sup>1</sup>

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the brief and the answer for the details thereof.

#### ***OPINION***

After a careful review of the evidence before us, we agree with the Examiner that claims 1, 4, 6 through 9, 11 through 13, 15 and 18 through 22 are properly rejected under 35 U.S.C. § 102(e), and in the alternative under 35 U.S.C. §

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<sup>1</sup>A rejection of claims 1-5 under 35 U.S.C. § 112, paragraph 2, was withdrawn, see answer-page 4.

103, and that claims 2 and 3 are properly rejected under 35 U.S.C. § 103. Thus, we will sustain the rejection of these claims but we will reverse the rejection of claims 5, 10 and 14 on appeal for the reasons set forth *infra*.

At the outset, we note that Appellants have indicated on page 10 of the brief the claims do not stand or fall together. Appellants indicate that claims 1, 4, 6 through 9, 11 through 13 and 18 through 21 stand or fall together, and that claim 22 stands or falls separately.

With respect to claim 1, representative of the group of claims 1, 4, 6 through 9, 11 through 13 and 18 through 21, the Examiner indicates that Sampietro teaches the claimed invention with an inherent control means that operates the actuator arm and the bucking coil simultaneously (35 U.S.C. § 102(e)). Alternatively, it would have been obvious for the control means to operate the actuator arm and bucking coil simultaneously (35 U.S.C. § 103).

Appellants argue that Sampietro does not provide movement current to the actuator arm and bucking coil

**simultaneously**, at the exact same time. Appellants state:

Applicants' claims call for a control means which can begin to provide "a movement current ... at a time when" also beginning "to provide a field generating current." As set forth by Applicants' claims, the present invention is not simply calling for the use of a bucking coil to eliminate or reduce the magnetic force in a capture region, so that less power can be used to unlatch an actuator. Instead, Applicants' claims are establishing a limitation that calls for the simultaneous **initiation** of the actuator movement current and the bucking coil field generating current.

*Sampietro, et al.* merely suggests that a magnetic latching force may be counteracted during the unlatching of an actuator by supplying a short duration current pulse to a bucking coil.... No showing is made of any temporal relationship between the **initiation** of the bucking coil current pulse and the **initiation** of the actuator movement current. (**emphasis added.**) (Brief-pages 15 and 16.)

The Examiner responds that the two currents of *Sampietro* must operate **simultaneously**, otherwise the bucking coil would be of no assistance to the actuator arm to break free of the magnetic latch (answer-pages 4 and 5).

Furthermore, the Examiner states:

As courteously pointed out by the Appellants, the device of *Sampietro et al* (US 5,361,182) requires that the filed [sic, field] generating current [bucking coil] and the movement current [actuator arm] be operated **simultaneously**, (as long as the field and movement generating

current applications overlap each other, they are operating *simultaneously*). The Examiner is at a loss to explain how the Appellants interpretation of Sampietro et al (US 5,361,182), given the examples cited by the Appellants, cannot fall within the scope of the claimed invention. (Bold emphasis added.) (Answer-pages 5 and 6.)

We agree with the Examiner, and it appears that Appellants agree, that Sampietro does require the two currents to be acting **simultaneously**. However, Appellants' point is that the two simultaneous currents of Sampietro do not necessarily **begin** simultaneously as claimed. It is clear from the claim language that one current begins **when** the other current begins. But, does **when** mean exactly and precisely at the **same instant in time**? Clearly, a person may enter a room **when** the door is opened. However, if the door is not opened slightly before entering, the person would walk into the door.

As pointed out by our reviewing court, we must first determine the scope of the claim. "[T]he name of the game is the claim." ***In re Hiniker Co.***, 150 F.3d 1362, 1369, 47 USPQ2d 1523,1529 (Fed. Cir. 1998). During prosecution, the Patent and Trademark Office is required to give claims their "broadest reasonable interpretation", consistent with the

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specification. ***In re Morris***, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997).

A review of Appellants' specification supports the interpretation that **when** means nothing more than **simultaneously**. We note for example page 20, lines 12-15, wherein it states "Preferably, such [bucking] current is provided for only a split second (for example, 0.10 second,) while the control means simultaneously causes actuator assembly 36 to pivot actuator arm 50..." We also note page 23, lines 9 and 10, wherein it states, "to energize bucking coil 85, while simultaneously driving current to actuator coil 52... ." A review of Appellants' originally filed claims reveals nothing more than **simultaneously**, this appearing in original dependent claim 13. Thus, we find no justification for interpreting the claim language "when ... begins" to be anything more than "simultaneously".

Appellants further argue, in accordance with the "means for" claim language and ***In re Donaldson***:



Sampietro, et al. fails to provide a disclosure of any apparatus that has a structure or operation that is the same or equivalent to the aforementioned embodiment of Applicants' control means. (Brief-page 17.)

We have reviewed Appellants' specification and drawings to determine the exact control structure disclosed, and what would constitute reasonable equivalents thereof. At page 22, lines 16-22, Appellants' specification states:

Control electronics suitable for use in accordance with the disk drive described herein are described in U.S. Patent No. 4,979,056. To control bucking coil 85, circuitry for controlling the bucking coil to release the actuator coil may be included in the control electronics. A block representation of such circuitry is shown in Figure 9.

As described in Appellants' specification and Figure 9, a microprocessor, depicted by a block in Figure 9, controls the timing of **when** (i.e., simultaneously) the two currents **begin**. Turning to Sampietro, we note "...for later connection to the **control logic** (not shown) needed to activate the [bucking] coil 60." (emphasis added) (column 6, lines 4-5). Thus, Sampietro discloses control logic to activate the bucking coil. There can be little dispute, or at least it would have been very obvious, that known disk drives such as

Sampietro require a microprocessor to control the actuator arm for information access. It would be logical and natural to expect such a microprocessor, in a Sampietro type disk assembly, to incorporate the bucking coil control logic. Accordingly, we find that Sampietro suggests the same, or at least a reasonable equivalent of, the "control means" recited in Appellants' claims.

In view of the above, we find that Sampietro anticipates the apparatus of claim 1. Additionally, Sampietro acknowledges the need to have adequate latching power while conserving on energy to the actuator arm motor when releasing the actuator arm. (See column 2, line 64 to column 3, line 4.) This is especially so with portable computers, as acknowledged by Appellants (specification page 3, line 26 to page 4, line 11). Thus, even if Sampietro did not anticipate the apparatus of claim 1, it would have been obvious to operate Sampietro's actuator motor and bucking coil at the **same time** (i.e., simultaneously), because any wasted overlap of the control signals would waste precious battery power in a portable computer. Accordingly, we find, in the alternative,

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that claim 1 is unpatentable over Sampietro under 35 U.S.C. §  
103. We will therefore sustain the

Examiner's rejection of claim 1, and likewise claims 4, 6  
through 9, 11 through 13, 15 and 18 through 21 which stand or  
fall in the same group.

With respect to claim 22, a method rendition of  
apparatus claim 1, we will sustain the Examiner's rejection of  
this claim for the same reasons enumerated supra. The claimed  
method is clearly met by Sampietro, and at least would have  
been obvious thereover.

Appellants argue that claims 2 and 3 are patentable  
over Sampietro because they require the bucking field to be  
active "for a time of about 0.10 second", and this limitation  
is not necessarily obtained by routine experimentation and  
optimization. (Brief-page 23.)

The Examiner maintains that mere experimentation  
would determine this time period and cites Sampietro, column  
2, lines 56-63 (final rejection), wherein it states "by

supplying a short duration current pulse to a bucking coil".

We agree with the Examiner. Determining the optimal values of result effective variables would have been obvious and ordinarily within the skill of the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). Since Sampietro uses a short duration current pulse, and conservation of power is a primary concern, experimentation with variable width pulses would be expected to arrive at an optimal value. We envision the optimal value to vary depending upon the particular disk drive involved, disk drives being of different sizes, and having actuator arms of differing inertial masses, etc. Although Appellants dispute mere experimentation as the vehicle for arriving at **about 0.10 second**, they have offered no other explanation for its determination, nor have they alleged unexpected results. Accordingly, we find the limitation of **about 0.10 second** to be the obvious result of experimentation to optimize a result effective variable. Thus, we will sustain the Examiner's rejection of claims 2 and 3.

With respect to claims 5, 10 and 14, Appellants

argue that neither Kelsic or Campbell teach a **capture member** that is pivotally mounted with a face portion having two coplanar surfaces and a recess portion as claimed.

The Examiner points to elements 64, 66 and 60 in Kelsic and latch plate 45 in Campbell. With respect to Kelsic, the latch plate (i.e., capture member) is element 36, not magnet 60 and pole pieces 64 and 66. Kelsic's magnetic elements 64, 66 and 60 are pivotally mounted, and one could argue, provide an equivalent pivotal alignment ability with the latch plate 36 (an obvious reversal of parts). However, as argued by Appellants, the capture member (catch plate 36) still does not have a face portion having two coplanar surfaces and a recess portion.

With respect to Campbell (Figure 5), latch plate 45 is not pivotally mounted. Additionally, the portions of 45A and 45B which are perpendicular to 45 (referenced by the Examiner) are not coplanar, but are in parallel planes. We also find it a stretch to consider 45 as the recess portion as proffered by the Examiner.

Accordingly, we will not sustain the Examiner's

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rejection of claims 5, 10 and 14 under 35 U.S.C. § 103 with respect to either Kelsic or Campbell combined with Sampietro.

In view of the foregoing, the decision of the Examiner rejecting claims 1, 4, 6 through 9, 11 through 13, 15 and 18 through 22 under 35 U.S.C. § 102(e), and in the alternative under 35 U.S.C. § 103 is affirmed, also the Examiner's decision rejecting claims 2 and 3 under 35 U.S.C. § 103 is affirmed; however, the decision of the Examiner rejecting claims 5, 10 and 14 under 35 U.S.C. § 103 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

***AFFIRMED-IN-PART***

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Administrative Patent Judge	)	
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